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ABSTRACT

This study examined whether teacher candidates' anxiety about teaching in accord with teacher development theory decreased through teacher preparation and the fifth year of teaching and whether changes in anxiety related to academic ability and personal attributes. Participants were 117 teacher candidates who completed approximately 5 years of classroom teaching over the course of the study. They completed the Teaching Anxiety Scale upon commencement of teacher preparation, near the end of student teaching, and near the end of the fifth year of teaching. Data analysis revealed that (1) anxiety decreased from the commencement to the end of teacher preparation, (2) anxiety remained stable from the end of preparation through the fifth year of teaching, and (3) the variance of anxiety levels increased from the beginning of preparation to the fifth year of teaching. Anxiety about teaching related to basic academic skills and ACT scores, locus of control orientation, initial degree of assurance about becoming teachers, and Myers-Briggs extroverted-introverted classifications. Candidates with higher academic skills experienced greater anxiety reduction than their less skilled peers. Anxiety reduction appeared to continue through the first 5 years of teaching for more skilled candidates. Extent of anxiety about teaching did not relate to gender, major, student-teaching performance ratings, presence or absence of teachers in their immediate family, time at which the decision to teach was made, or grade point averages. (Contains 40 references.) (SM)

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A Seven-Year Multivariate Longitudinal Study of the Changes in Anxiety About Teaching Through Preparation and Early Years of Teaching

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Abstract

This longitudinal study was designed to ascertain whether teacher candidates' anxiety about teaching decreased through teacher preparation and the fifth year of teaching in accord with teacher development theory and also to determine whether anticipated changes in anxiety were associated with selected academic ability and personal attributes of the neophyte teachers. Two-way ANOVA procedures revealed that anxiety decreased from the commencement of teacher preparation to the end of teacher preparation, that anxiety remained stable from the end of preparation through the fifth year of teaching, and that the diversity of the levels of anxiety reported by the candidates increased from the beginning of preparation to the fifth year of teaching. Anxiety about teaching was found to be related to the candidates' basic academic skills and ACT scores, locus of control orientation, initial degree of assurance about becoming a teacher, and to their Myers-Briggs' extroverted-introverted classification. The presence of an academic skills x time in career development interaction indicated that the candidates with higher academic skills experienced a greater reduction in anxiety about teaching than their less skilled cohorts, and, rather significantly, this reduction in anxiety appeared to continue through the first five years of teaching for the more skilled, but not for the less skilled, candidates. The extent of the candidates' anxiety about teaching was not found to be related to their gender, major, student teaching performance ratings, presence or absence of teachers in their immediate family, time at which the decision to teach was made, and university and education grade point averages.

A Seven-Year Multivariate Longitudinal Study of the Changes in Anxiety About Teaching Through Preparation and Early Years of Teaching

Prospective teachers entering the complex classroom setting and first experiencing complete responsibility for teaching frequently report feelings commonly described in the research literature as reality shock. Many educators hypothesize that insufficient preservice field experiences precipitate these feelings of reality shock, but sociologists such as Lortie (1975) perceive teacher preparation to be but a minor component in the socialization of teachers. Lortie described teaching as a complex and demanding profession with inherently high levels of stress, anxiety, burn-out, and turnover rates wherein development is perceived as resulting from learning by doing rather than from formal preparation.

The socialization of teachers is perceived to evolve from the interaction of teacher and employing school expectations and inputs (Carroll, 1981; Quaglia & Rog, 1989). The fulfillment of mutual expectations leads to mutual satisfaction and successful employment; conversely, unmet expectations result in increases in stress and anxiety which may lead to termination of employment. Firestone and Pennell (1993) report research indicating that the neophyte teachers' commitment to teaching, and especially voluntary commitment, is a major factor in explaining employment persistence. 0Commitment is generally defined as a psychological bond between an individual and an organization or profession. Successes, or the fulfillment of mutual expectations, in a profession lead to this bonding relationship; whereas failures in a profession or organization lead to a lack of bonding, to frustrations and burn-out, and to heightened anxiety and psychological exhaustion. Relative to the school workplace, research in classrooms has found relationships between teachers' commitment and pupil achievement (Firestone & Rosenblum, 1988; Kushman, 1992), between teachers' perceptions of a safe-comfortable work setting and teacher turnover rates (Seyforth and Bost, 1986), and between absence of teacher feedback during induction and feelings of anxiety (Chester & Beaudin, 1996).

Theoretically, the successful preparation and induction of teacher candidates into the profession should result in a reduction of trait specific anxiety such as measured by the Teaching Anxiety Scale (Parsons, 1973), and findings from cross-sectional studies support the hypothesis that

levels of anxiety about teaching do decrease during teacher preparation (Clemson-Ingram & Fessler, 1997; Pigge & Marso, 1987; Poole & Gaudry, 1974; Silvernail & Costello, 1983). The inherent weaknesses of these cross-sectional studies, of course, is that anxiety reduction may be no more than an artifact of attrition of the more anxious teachers across the samples of teachers at different career points. Longitudinal evidence of changes in anxiety, and particularly of changes from the preservice through the early years of teaching, is sparse at best. In one such study Pigge and Marso (1990a) reported a reduction in anxiety for a longitudinal sample of teacher candidates progressing through teacher preparation. Recent reviews of the teacher development research literature confirm this sparsity of longitudinal studies (Bendixen-Noe & Redick, 1995; Brookhart & Freeman, 1992; Firestone & Pennell, 1993).

In general, anxiety theory suggests that high levels of anxiety about teaching would have a detrimental impact upon the transition of teacher candidates into the profession, upon subsequent classroom teaching behaviors, and ultimately upon pupil behavior and performance. Furthermore, limited research findings support these assumptions. For example, Harootunian and Koon (1970) found that teachers with high levels of anxiety provided less verbal support for their pupils; Clark (1973) reported that teachers with high levels of anxiety assigned lower grades to their pupils; Crame (1974) and Krasno (1972) noted that teachers with higher levels of anxiety had lower levels of job satisfaction and had lower persistence in the profession; Byrne (1994) reported relationships between teacher burnout, of which anxiety was considered a component, and several job and personal characteristics; Pigge and Marso (1990b) identified a negative relationship between level of anxiety about teaching and level of student teaching performance; and Kracht and Casey (1968), Doyal and Forsyth (1983), and Moskowitz and Hayman (1974) found that the level of teachers' anxiety was positively related to the levels of their pupils' anxiety and negatively to teacher rapport with and acceptance by pupils. Additionally, Osborne (1973) reported that levels of teachers' anxiety were negatively related to the academic performance of pupils, Marsh and Yeung (1996) reported that the anxiety of pupils, themselves, is subject area specific, and Parkay, Greenwood, Olejnik, and Proller (1988) reported that teachers with high levels of anxiety had more pupil discipline problems and less

desirable relationships with superiors, colleagues, and parents. Despite these studies indicating relatively well-established relationships between teachers' anxiety and various teaching and classroom behaviors, Keavney and Sinclair (1978) suggested that teacher anxiety still remains a much neglected topic in research of teaching, and noted that it is commonly neglected as a factor within instructional models, and the present review of the literature suggests that this neglect has persisted since the Keavney and Sinclair observation.

The present longitudinal study was designed to ascertain whether neophyte teachers' level of anxiety about teaching decreases during teacher preparation and through their fifth year of teaching and to determine whether selected indices of these teachers' academic ability and personal attributes were associated with changes in anxiety about teaching during this period. More specifically this study was designed to test the following hypotheses: 1) Neophyte teachers' level of anxiety about teaching will decrease as they progress through teacher preparation and the fifth year of teaching. 2) Neophyte teachers' level of anxiety about teaching will be related to the following selected indices of their academic ability: student teaching performance ratings, university and education grade point averages, and American College Test and Comprehensive Test of Basic Skills composite scores. 3) Neophyte teachers' level of anxiety about teaching will be related to the following selected indices of their personal attributes: gender, planned grade level of instruction, when they first decided to teach, the presence or absence of teachers in their immediate families, level of initial assurance about becoming teachers, Myers-Briggs personal preference classifications, and their locus of control orientation.

The selected academic and personal variables were included in the present study as previous research has revealed that relationships exist between developmental changes in teachers and teachers' beliefs, prior experiences, and personality (Kagan, 1992) and that academic indices are associated with teacher attrition (Heyns, 1988). For example, in addition to the previously cited research findings, Pigge and Marso (1992) identified relationships between teacher candidates' persistence in teacher preparation and indices of their academic ability, and Murray and Staebler

(1974) reported a relationship between teachers' locus of control orientation and feelings of responsibility for the achievement of their pupils.

Method

The subjects for this longitudinal study consisted of 117 teacher candidates who began their teacher training at a large teacher preparation institution in the midwest and who had completed approximately five years of classroom teaching. These individuals completed the Teaching Anxiety Scale (Parsons, 1973) upon the commencement of their teacher preparation, near the end of their student teaching practicum, and again near the end of their fifth year of teaching.

Upon the commencement of teacher preparation these teacher candidates were predominantly white (98%), female (81%), elementary (57%) and secondary (43%) majors, very certain or almost certain about teaching (88%), from families with teachers in the present or prior generation (60%), children of parent or parents not having four-year college degrees (67%), from somewhat larger families (46% with three or more siblings), second or later birth order (66%), with some or considerable prior teaching-like experiences (73%), confident about becoming unusually good to exceptionally effective future teachers (78%), primarily from rural (33%) or suburban (54%) high schools of moderate to small size (61% with high school graduating classes of 300 or less), and most had decided to teach when in their elementary years (24%) or when in their high school years (50%). These teacher candidates were found to have sought employment by and to have been employed by schools similar in size and location to those schools from which they had graduated.

The Teaching Anxiety Scale was developed as a situation-specific scale with the implicit assumption that teaching anxiety will decrease as teacher candidates' teaching knowledge and skills develop. It is comprised of 29 items with a response continuum for each item from never '1' to always '5' with higher scores indicating more anxiety about teaching. Parsons (1973) reported a test-retest coefficient of stability of 0.95 and alpha internal consistency coefficients within a range of 0.87 to 0.94 for the scale. She also reported concurrent validity evidence for the scale in the form of correlations between the scale and several other anxiety instruments (coefficients from 0.25 to 0.62) and of

correlations between preservice teacher interns' scores on the scale and their teacher supervisors' ratings of their anxiety about teaching (coefficients from 0.24 to 0.54).

In addition to the measurements of anxiety at the three points in teacher development, the following data were gathered for the subjects: American College Test (ACT) and Comprehensive Test of Basic Skills (CTBS) composite scores, gender, planned grade level of instruction, when they decided to choose teaching as a career, degree of assurance about teaching, and presence or absence of teachers in their families, all gathered at the commencement of preparation; and university and education grade point averages, Rotter's (1966) locus of control scores, university supervisors' ratings of student teaching performance and, Myers-Briggs Type Indicator personal preference classifications (Myers & McCaulley, 1985) gathered at or near the end of teacher preparation. These latter two instruments have been used extensively in various research studies over a period of many years. The ACT instrument was developed by the American College Testing Program and is one of the two major college admissions tests which has been used for over three decades. The CTBS is one of the most frequently used K-14 grades standardized achievement batteries with a focus on reading abilities, language skills, and mathematical concepts and computations.

The data collected from the subjects were analyzed through the use of mixed-model two-way ANOVAs with repeated measures on one factor. The anxiety about teaching scores were used as the dependent variable; the three anxiety measurement points during the teachers' development (prior to and following teacher preparation and near the end of the first year of teaching) served as the single repeated measures factor and as the main independent variable (column classification); and the various classifications of the neophyte teachers' academic ability indices and personal attributes were used as second independent variables (row classifications).

The specific row classifications used in the various 3x2 and 3x3 ANOVA procedures for the academic ability indices and personal attribute classifications were: approximately high and low halves formed from the ACT and CTBS composite scores, the university and education grade point averages, and the student teaching performance ratings; the dichotomous personal attribute classifications of presence or absence of teachers in the immediate family, gender, planned grade level

of instruction (elementary or secondary), and Myers-Briggs' four personal preferences (extroversion-introversion, sensing-intuition, thinking-feeling, and judging-perceptive); and the three level classifications of approximately top, mid, and bottom one-thirds of the externality scores from Rotter's locus of control scale reported initial assurance about teaching (very certain, certain, and uncertain), and the three category classification of when the subjects decided to become teachers (prior to, during, and following their high school years).

Findings

The two-way mixed-model ANOVA procedures revealed that the teacher candidates reported significantly lower levels of anxiety about teaching from pre- to post-teacher preparation and appeared to maintain that reduced level of anxiety through their first five years of teaching. The anxiety about teaching means for this analysis were upon commencement of preparation $\underline{M} = 70.52$, following the student teaching practicum $\underline{M} = 62.94$, and near the end of the fifth year of teaching $\underline{M} = 62.08$ ($F = 22.82$, $p = .0001$) when the degree of assurance served as the row classification. This pattern of anxiety was consistent across the various row classifications. Three personal attribute and two academic ability classifications revealed significant or nearly significant row main effect anxiety mean differences. And a significant time in career development x CTBS classification interaction also was identified for the anxiety scores, as shown in Table 1. Despite the apparent stability of the anxiety means from completion of teacher preparation to the fifth year of teaching, it can be noted from the standard deviations reported in Table 2 that a greater diversity was reported in the levels of anxiety about teaching within nearly all subject classification groups near the end of the fifth year of teaching as compared to the two earlier points in the career development of the candidates. This increased diversity at the end of the fifth year of teaching suggests that the candidates may have experienced different levels of success in making their transition to teaching resulting in a decline in anxiety for some teachers but an increase for others.

Insert Table 1 about here

Locus of Control Classification

The neophyte teachers classified as having an internal locus of control orientation, those who perceived themselves as having more control over their environment, reported lower levels of anxiety about teaching than did the mid and high externally controlled novice teachers. These means were 61.80, 68.32, and 65.56 respectively for those classified as approximately low, mid, and high one-thirds relative to externality scores ($F = 3.11$, $p = .0507$). As can be seen in Table 2, the locus of control row classification indicates that the teachers with low externality scores reported a lower level of anxiety at each of the three times in teacher development, that teacher candidates at all levels of locus of control reported less anxiety about teaching after teacher preparation than they had reported upon commencement of training, and that all three locus of control groups of teachers reported approximately equivalent levels of anxiety near the end of the fifth year of teaching as they had reported upon the completion of teacher preparation. The mid locus of control candidates reported the highest levels of anxiety about teaching at the three career points with the difference being most evident upon commencement of preparation.

Insert Table 2 about here

ACT and CTBS Classifications

The ACT and CTBS academic ability indices revealed a near significant ACT main effect row mean difference and a significant time in career x CTBS classification interaction effect. The novice teachers' university and education grade point averages and student teaching performance ratings classifications did not reveal significant differences in reported levels of anxiety. The teachers with higher ACT scores reported less anxiety about teaching ($\underline{M} = 62.51$) than did the lower ACT scores ($\underline{M} = 66.35$), although this difference just approached significance, $F = 3.06$, $p = .0842$ as shown in Table 1. The teachers with high and low ACT scores reported similar levels of anxiety at the commencement of teacher preparation, but the candidates with high ACT scores reported somewhat

lower levels of anxiety near the end of the student teaching practicum and the fifth year of teaching as compared to those with low ACT scores (see Table 2).

The CTBS classification of the novice teachers did not result in a significant main effect difference for anxiety about teaching ($F = 2.01$, $p = .1588$); however, the time in teacher development x CTBS interaction for the anxiety about teaching scores was significant ($F = 3.63$, $p = .0281$). The pattern of means for this interaction (see Table 2 and Figure 1) suggests that teachers with low and high basic academic skills commenced teacher training with comparable levels of anxiety about teaching, that the teachers with higher CTBS scores reported a greater reduction in anxiety during teacher preparation, and that during the early years of teaching the high skills teachers reported a continued slight reduction in anxiety whereas the low skills teachers did not. For both the CTBS and ACT classifications, the differences between the groups of teachers were greater at the end of teacher preparation and still greater yet near the end of the fifth year of teaching than upon commencement of teacher preparation. Furthermore, the increase in the within group diversity levels of anxiety reported during teacher preparation as compared to the fifth year of teaching was greater for the lower ACT and CTBS than the higher ACT and CTBS groups (see the standard deviations in Table 2). This might suggest that these less able candidates, in particular, may have been experiencing more difficulty in making the transition from students to teachers.

Insert Figure 1 about here

Assurance About Teaching Classification

The classification of the teachers by the extent to which they were sure of their decision to become teachers upon commencement of teacher preparation resulted in a significant row main effect difference. These overall means were $\underline{M} = 62.50$ for the very certain about teaching, $\underline{M} = 66.44$ certain, and $\underline{M} = 72.13$ for the uncertain about teaching group ($F = 7.18$, $p = .0012$). The uncertain candidates reported the highest levels of anxiety at all three times in teacher development followed by the certain and then the very certain candidates as can be seen in Table 2. The certain and uncertain

candidates, however, reported larger decreases in anxiety about teaching across the three points in development than did the very certain candidates. The very certain candidates' anxiety levels stayed relatively stable over the three points in time but, as already noted, remained lowest of the three groups at all three points of measurement (e.g., approximately 16 points). The difference in reported levels of anxiety among the three groups was only about one-half as large at the end of the fifth year of teaching as upon commencement of teacher preparation. The diversity of reported levels of anxiety within the groups (see the SDs in Table 2), however, became greater between the end of preparation and the fifth year of teaching, and this increase in diversity appeared to be most pronounced for the certain as compared to the very certain and uncertain groups. Just 14, or about 12%, of the teachers had reported being uncertain about their decision upon the commencement of teacher preparation.

Extrovert-Introvert Classification

The Myers-Briggs extrovert-introvert classification resulted in a significant row main effect difference. These overall means were 63.58 and 68.67, respectively ($F = 6.63$, $p = .0115$) as shown in Table 1. The extroverts, those who relate more easily to the outer world of people than to the inner world of ideas, reported lower levels of anxiety about teaching at all three points in development as compared to their introverted cohorts, as can be seen in Table 2. Differences between the two groups were much greater at the end of teacher preparation compared to upon the commencement of preparation, and this difference continued through the first years of teaching. The anxiety levels of the extroverts decreased to a somewhat greater extent than the introverts during teacher preparation, and neither group reported much change between the end of teacher preparation and the fifth year of teaching. It can be noted also that approximately two-thirds of this sample of teachers had been classified as extroverts.

Summary and Discussion

A longitudinal sample of 117 neophyte teachers completed a measure of anxiety about teaching upon commencement of teacher training, near the end of their student teaching practicum, and again near the completion of the fifth year of teaching. In accord with the theoretical model of teacher development, these novice teachers reported less anxiety about teaching upon completion of teacher

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preparation and after the initial years of teaching than they had reported at the beginning of teacher preparation. The reported levels of anxiety about teaching, however, remained relatively stable between the end of the teaching preparation and the fifth year of teaching except that the diversity of the levels of anxiety reported was greater at the latter point in time. The ACT, CTBS, locus of control orientation, degree of initial assurance about teaching, and Myers-Briggs extrovert-introvert preference classifications of the neophyte teachers revealed differences in levels of anxiety about teaching. The difference for the ACT classification, however, just reached near significance ($p = .0842$). The level of the candidates' anxiety about teaching was not found to be related to the other academic ability and personal classifications selected for study, namely: their student teaching performance ratings, education and university grade point averages, gender, planned instructional level, when they chose teaching as a career, presence or absence of teachers in the immediate family, and the Myers-Briggs sensing-intuition, thinking-feeling, and judging-perceptive personal preferences.

A significant CTBS classification x time in career development statistical interaction was identified which indicated that the more skilled teacher candidates experienced a greater reduction in anxiety about teaching during teacher preparation and the early teaching years compared to their less skilled cohorts. The main effect high and low Comprehensive Test of Basic Skills classification of the novice teachers, itself, revealed nonsignificant mean differences. The teachers with a low externalilty locus of control, those feeling that they have relatively more control over their environment, reported lower levels of anxiety about teaching than did those with a mid or high externality locus of control at each of the three measurement points during teacher development. The mid level externality candidates, although reporting the highest levels of anxiety at each of the career points in time, reported a somewhat greater reduction in levels of anxiety about teaching over the period studied than did the high and low externality novice teachers.

The teacher candidates who reported being very certain about their decision to teach upon commencement of teacher preparation reported the lowest and nearly stable levels of anxiety over the three points in teacher development. In contrast, their less certain and uncertain cohorts began teacher preparation with higher levels of anxiety about teaching but reported larger decreases in anxiety

following their student teaching practicum and a modest but larger decrease again near the end of their fifth year of teaching than did their very certain about becoming teachers cohorts. Despite this decline in anxiety about teaching over the three periods of development, the uncertain about teaching candidates still reported a higher level of anxiety at the end of the fifth year of teaching than did the very certain candidates at each of the three times in their career development.

The teacher candidates classified as extroverted by the Myers-Briggs instrument began teacher preparation with lower levels of anxiety about teaching yet still reported nearly twice as large a decrease in anxiety about teaching from pre- to post-teacher preparation than did their introverted cohorts. This would suggest that the extroverted candidates began teacher preparation at a relative emotional advantage to their cohorts which increased during teacher preparation. This might suggest that the experiences inherent to teacher preparation, such as the teacher practicum, favor those with teacher candidates more comfortable in social interactions.

The finding of a relationship between levels of anxiety about teaching and locus of control during the development of the teacher in the present study would appear to be important as other researchers have identified relationships between locus of control orientation of teachers and their teaching behavior (McIntyre, 1984; Meadow, 1981; Parkay, Greenwood, Olejnik, & Proller, 1988). These researchers described internally controlled and less anxious teachers as having fewer classroom discipline problems, having fewer intrapersonal conflicts, and having better relations with superiors, colleagues, and students' parents than their more stressful and externally controlled colleagues. Researchers also have identified relationships between classroom teachers' locus of control and both their feelings of responsibility for their pupils progress and their pupils' actual progress. For example, Ashton, Webb, and Doda (1983) reported that internally controlled teachers accepted more personal responsibility for their pupils' success as compared to their externally controlled cohorts, and Murray and Staebler (1974) found that those teachers reporting feelings of internal, as opposed to external locus of control, had higher achieving pupils.

The interaction effect revealed between the levels of the teachers' basic academic skills and the three measurement points during teacher development for anxiety about teaching would seem

logical and consistent with anxiety theory. If one assumes that the candidates with higher basic academic skills likely experienced higher degrees of success in teacher preparation and in making the transition from students to teachers as compared to their less skilled cohorts, than anxiety theory would predict larger decreases in reported anxiety during these two periods and that is what was revealed by this interaction. In contrast, the novice teachers with lower CTBS scores reported less of a decline in anxiety from pre- to post-preparation and no decline from the end of teacher preparation to the fifth year of teaching.

The near significant difference in the levels of anxiety between the novice teachers with high and low ACT scores in the present study suggests that those teachers with higher ACT scores experience decreases in anxiety about teaching during teacher preparation and again during the transition from students to teaching; whereas the low ACT teachers reported decreases during preparation but not between preparation and the fifth year of teaching in a pattern similar to the low CTBS teachers described in the prior paragraph. Why this pattern of change in anxiety was not found for the education and university grade point averages and student teaching performance ratings is not as readily apparent. One possible explanation is that most graduates from teacher preparation programs earn relatively high grades in teacher preparation and receive high student teaching performance ratings, thus creating a more restricted range in variance of these variables which might tend to conceal small differences that may have been present. Other researchers studying teacher persisters and nonpersisters have found this type of descrepancy to exist between teacher standardized achievement and aptitude measures in contrast to classroom performance indices thereby suggesting that such a discrepancy truly exists (Nelson, 1985). This research indicates that nonpersisting teachers tend to have higher aptitude scores, but persisting teachers tend to have earned higher grades in college.

In summation, the findings from the present longitudinal study support the contention that the levels of anxiety about teaching reported by teacher candidates decrease during teacher preparation as teaching knowledge and skills are developed, but somewhat in contrast to this contention, anxiety remained relatively constant from the end of teacher preparation to the fifth year of teaching. During these early teaching years, one would expect continued development of teaching knowledge and skills

followed by a reduction in anxiety about teaching. The findings from the various classifications of the novice teachers, from the CTBS x time in career development interaction, and from the increased size of the variance in the anxiety scores reported (see SDs in Table 2) at the end of the fifth year of teaching, indicates that some but not all candidates felt less anxiety about teaching following their early years of teaching. This collected data also suggested that the more able candidates with higher ACT and CTBS skills may have experienced a continuing decline in levels of anxiety during the early years of teaching. The lack of a general reduction in anxiety about teaching during the student to teacher transition may be a result of the complex classroom demands experienced during the initial years of teaching which have been described as a traumatic and reality shocking period of socialization for neophyte teachers. It also is possible that anxiety may decrease after these more traumatic early transition years. In other words, if these teacher candidates' anxiety toward teaching was assessed again 10 years after graduation, a more general decrease in anxiety might be noted.

The findings from this study provided general support for the first hypothesis predicting a decline in novice teachers' anxiety about teaching during their early developmental years. The finding of relationships between two of the five selected academic performance indices and the teacher candidates' reported levels of anxiety about teaching provided just partial support for hypothesis two; similarly the finding of relationships between three of the seven selected personal attribute indices and levels of anxiety about teaching reported by the candidates provided just partial support for hypothesis three. In conclusion, the findings of this study lend some support to the validity of the developmental perception of teachers' anxiety about teaching, and the present longitudinal findings also indicate that teacher ability and personal traits are associated with anxiety development and that the initial years of teaching appear to increase the diversity of feelings of anxiety about teaching within groups of novice teachers.

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Table 1

3 x 2 and 3 x 3 ANOVA F Values for Anxiety about Teaching Means at Three Times in Teacher Development and for Subject Classifications Revealing Significant Mean Differences

Time in Teacher Development[a]						Subject Classifications								
Soph.	Senior	5 years	df	F	p	External Locus of Control						Time x Locus		
						Low	Mid	High	df	F	p	df	F	p
71.67	62.96	62.70	2,148	19.66	.0001	61.80	68.32	65.56	2,74	3.11	.0507	4,148	0.27	.8978
						ACT								
						High		Low				Time x ACT		
70.13	62.04	61.14	2,156	23.92	.0001	62.51		66.35	1,78	3.06	.0842	2,156	1.75	.1776
						CTBS								
						High		Low				Time x CTBS		
70.53	62.89	61.99	2,228	32.85	.0001	63.87		66.40	1,114	2.01	.1588	2,228	3.63	.0281
						Assurance								
						Very Certain	Certain	Uncertain[b]				Time x Assurance		
70.52	62.94	62.08	2,226	22.82	.0001	62.50	66.44	72.13	2,113	7.18	.0012	4,226	0.28	.8923
						Myers-Briggs								
						Extrovert		Introvert[c]				Time x Myers-Briggs		
70.56	62.97	62.14	2,200	19.62	.0001	63.58		68.67	1,100	6.63	.0115	2,200	1.52	.2218

[a] The effect size ratios for pair-wise soph. and senior mean comparisons ($M_1 - M_2$/average S.D.) varied from .6 to .7 and for senior and 5-year comparisons less than .10.

[b] Assurance effect size pair-wise mean comparisons were 72.13 and 66.44 = .47, and 72.13 and 62.50 = .80.

[c] Extrovert-introvert effect size comparison = .42. Cohen (1965) describes effect size as the degree to which a phenomenon exists and effect sizes of .25 small, .50 medium, and 1.00 large.

Table 2

Anxiety about Teaching Cell Means, Standard Deviations, and n's for the Subject Classification Groups Revealing Significant Differences

Subject Classification*			Time in Teacher Development					
			Sophomores		Seniors		5th Yr. Teaching	
		n	M	SD	M	SD	M	SD
Locus Control:	Low	22	66.86	10.15	59.73	11.05	58.82	15.38
	Mid	36	75.14	11.63	65.00	10.85	64.82	15.22
	High	19	70.68	8.78	62.84	11.69	63.16	13.34
ACT:	High	37	69.30	11.34	60.51	10.58	57.72	12.00
	Low	43	70.95	11.07	63.56	11.65	64.55	15.81
CTBS:	High	56	70.96	11.02	61.30	11.36	59.35	11.57
	Low	60	70.10	11.34	64.47	11.05	64.63	14.98
Assurance:	Very Certain	58	62.29	11.32	60.19	12.13	60.01	13.34
	Certain	44	72.41	10.13	64.07	9.74	62.83	14.57
	Uncertain	14	77.93	8.91	70.79	7.66	68.27	10.13
Myers-Briggs:	Extrovert	69	69.78	10.65	60.99	10.38	59.96	13.56
	Introvert	33	72.18	12.24	67.12	10.39	66.70	14.39

* Numbers vary somewhat due to lack of complete data for all teachers.

Figure 1

Time in Teacher Development x Levels of Comprehensive Test of Basic Skills
Dependent Variable: Anxiety about Teaching Scores